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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/497,865	02/04/00	CHANG D	PD-980034

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HUGHES ELECTRONICS CORPORATION
PATENT DOCKET ADMINISTRATION
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EXAMINER	
ISSING, G	
ART UNIT	**PAPER NUMBER**
3662	4

DATE MAILED: 08/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/497,865	CHANG ET AL.	
	Examiner	Art Unit	
	Gregory C. Issing	3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2001* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 2, 4-11, 13-23, and 25-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al in view of Chang et al and Barrett et al.

Miura et al teach a commercial mobile satellite terminal as previously set forth in the last office action. Chang et al teach the claimed multiplexing scheme as shown in Fig. 2 thereof and as taught in the instant specification at page 11. Barrett et al teach the use of a satellite communications antenna array using cross-slotted waveguides wherein the array is mechanically scanned in azimuth and electronically scanned in elevation. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Miura et al by using the multiplexing scheme of Chang et al in order to reduce the number of components necessary and thereby reduce the size and cost of the antenna configuration which would allow for a lower profile design. Additionally, it would have been obvious to substitute a well known satellite communications antenna which incorporated mechanical scanning of the array in the azimuth direction and electronic scanning in the elevation direction in view of the teachings of Barrett et al.

3. Applicant argues that the amended claim language "for an equatorial satellite constellation" clearly defines over the art of record. This is not convincing. The claimed subject matter is directed to the terminal device and not the constellation; thus, the specific constellation fails to delimit the claimed terminal device. The amended language is merely an intended use in the preamble which does not provide any limiting qualities to the terminal device set forth in the body of the claims. In response to applicant's arguments, the recitation "for an equatorial

satellite constellation" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). There are no distinguishing features in the original disclosure which would differentiate a communication terminal communicating with equatorial-orbit satellites as opposed to inclined-orbit satellites; in fact, the specification describes the use of the terminal device with either. Lastly, there is nothing in the cited prior art, including Miura et al or Barrett et al, which prohibits/negates operation with equatorial-orbit satellites, in fact, user satellite terminal which are capable of communicating with satellites in any orbit type are known in the art (see for example, Day et al cited below). As such the use of the satellites in the prior art encompass all of the satellites in various orbits. Moreover, Barrett et al is directed to receiving digital broadcast video from a satellite, which is conventionally, a geostationary satellite. Thus, the applicant's argument that use with equatorial satellites fails to distinguish the claims over the prior art.

4. Applicant also alleges that none of the references of record teach a phased array antenna for use with an equatorial satellite constellation. This is not convincing. The digital beam forming antenna processing of both Miura et al and Chang et al meet the scope of the claimed phased array antenna (see for example, Chiba et al, cited below and Suzuki et al previously cited). Regarding the applicant's argument that the major axis of the radiation elements are aligned with a desired wavefront, this is not persuasive since any antenna would be steered in

order to align the antenna to an incoming or outgoing wavefront for the purpose of increasing gain. Applicant's statement that the new claims clearly define over the art of record fails to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

5. Claims 3, 12, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miura et al in view of Chang et al and Barrett et al as applied to claims 1, 2, 4-11, 13-23, and 25-37 above, and further in view of Ajioka.

Miura et al in view of Chang et al and Barrett et al teach the subject matter substantially as shown but Barrett et al fail to show the use of a septum within the waveguide. Ajioka teach the conventionality of a slotted septum in a waveguide to provide dual polarization control. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Miura et al in view of Chang et al and Barrett et al by incorporating the slotted septum in the waveguides to provide the desired control of the polarization of the transmitted/received signals in view of the teachings of Ajioka.

Applicant argues for the patentability of the independent claims and does not separately argue this rejection.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chiba et al, like Suzuki et al previously cited, disclose the operation of digital beam forming antennas as advanced phased array antennas wherein the amplitude and phase are controlled more precisely in the DBF than in conventional phased array antennas. Day et al is directed to the use of a user terminal in a satellite communication system using satellites in any

angle of inclination including polar, equatorial, inclined or other orbits wherein the user terminal includes a phased array antenna capable of multibeam steering which is both mechanically scanned and electronically scanned.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (703)-306-4156. The examiner can normally be reached on Mon-Thurs 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703)-306-4171. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Gregory C. Issing
Primary Examiner
Art Unit 3662

gci
August 8, 2001